

JOINT ARTHRODESIS, A FUSION ACROSS A JOINT: And two shall become one



Overview—“I don’t understand what an arthrodesis is; please help me understand the conditions that require it and the treatment.”

A planned arthrodesis is the result of a surgical procedure that removes the cartilage that lines a joint (on the ends of two bones), packs the joint space with bone graft, bridges the joint space with a metal implant attached to both bones, and then all is supported with a medical splint or custom brace for many weeks. This process results in a bony fusion of what used to be a joint-- a joint that is damaged beyond reasonable repair. Most commonly we are talking about the wrist joints and the ankle joints (larger joints are not routinely fused.)

The injuries that may need an arthrodesis include joint fractures (where too much of the joint is broken preventing putting it back together) and joint dislocations (where too many of the tiny ligaments and surrounding joint capsule are torn preventing repair). These joints can also be damaged by severe inflammation and degradation (similar to rheumatoid arthritis in people). Joint can be damaged too severely to expect a comfortable function for the joint; arthritis and instability can be quite disabling.

“Why is this procedure being recommended for my pet?”

The fusion of a badly injured joint will remove the joint movement; no more flexing and extending. No more cartilage to be worn down to the arthritis of “bone on bone” contact. We purposefully make two bones on either side of a joint become “one bone”. Without movement in a joint, there is no arthritis pain. And because we fuse the joint in a normal “standing” angle, the leg will support the body when walking.

“What options do I have to treat my pet’s condition?”

The injury, the joint involved and the patient’s size and body weight all determine what treatment options with good outcomes are available. Larger dogs and heavier dogs depend more on joints that can support them than tiny dogs and cats. Wrist joints will take more of the stress of walking and landing than the ankle joints. An injury to the entire wrist or ankle needs more attention than those involving only part of the wrist or ankle.

As a rule, these joint injuries, whether we apply surgical help to fuse them or not, will require splinting/bracing for many weeks. We can use common medical bandaging techniques to splint these joints managed in clinic weekly, or we can use custom braces managed at home once fitted properly. Skin related complications of long-term splinting/bracing are common, should be expected, and require close at-home and in-clinic monitoring with early adjustments to treat before they get worse.

“What postoperative complications do I need to know and understand when considering this surgery?”

Bandage-related skin complications are common given the duration of bandage/splint wear. Strict bandage compliance is necessary to minimize these but will not eliminate this concern.

Surgical implant related infections are reasonably common; if they occur, most or all implants must be removed following appropriate healing. In some severe infection circumstances, implants must be removed prior to appropriate healing and longer-term splinting/bracing will be needed.

Implant migration/breakage is reasonably common; if this occurs, partial or complete removal may be necessary. Additional support may be necessary depending on remaining implant strength.

“Are there situations when the surgical outcome is not what we hoped it would be?”

Splint-related complications can be severe and may require frequent in-clinic visits and treatments.

An unsuccessful arthrodesis that remains painful and unstable (i.e. no fusion has occurred with healing) may result in a recommendation for amputation or permanent use of a custom brace.

“How is my pet’s life and lifestyle likely to change after this procedure?”

Dogs and cats with a fused joint can live active lives after several months of healing. They will have some adjustments they have to make to their gait and their activities because the joint no longer bends. Often the leg swings outward in an arch instead of straight forward. When they sit and lie down, they will keep the leg out to the side instead of tucking it under them in a flexed position.

“Are there things I can do to prepare myself, my home and/or my pet for this procedure?”

As mentioned, 2-3 months of splinting is needed to support the area during healing. A custom brace can be a logistically easier tool for at-home management than a medical splint that requires weekly in-clinic visits. Depending on the logistics of the medical and surgical needs, a visit for a custom brace may be recommended immediately before or several weeks after surgical stabilization (if performed.)

Activity restrictions will be necessary and can be challenging depending on your home setting. Having gates to block off stairs and putting down runners to improve traction in slippery, high-use areas are both beneficial.

Depending on the size of your pet, having a comfortable rear-limb sling ready to be used right after surgery can be back saving (yours!) Consider the [Help ‘em Up sling](#) as an ergonomic brand that is used commonly in veterinary patients. (See the website for this brand of sling.)

Outpatient surgery and anesthesia can be uncomfortable, painful, disorienting, and frustrating experiences for animals; watching your pet work through the early postoperative period and recover from anesthesia and pain medications can be worrisome, scary and frustrating for pet owners. The vast majority of the time this period of difficulty is brief, and *your pet is actually more comfortable and secure at home with you*. Sometimes it doesn’t feel like that at two in the morning when your pet is anxious and not consolable, and you are unsure of what to do. You always have the option of transporting your pet to a 24-hour veterinary facility postoperatively. If you do not want to have your pet home in the first few days postoperatively, please advise your primary care veterinary staff. They will provide contact information for a local 24-hour veterinary facility and help get an estimate for the ongoing care.

It is important that you have proper expectations about this procedure; your experience and you pet’s outcome will benefit greatly. Please discuss this information with your veterinarian when working through the decision-making process regarding **Joint Arthrodesis**.

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